



Designation: D7393 – 16 (Reapproved 2020)

Standard Practice for Indicating Oil in Abrasives¹

This standard is issued under the fixed designation D7393; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This practice is used to determine the presence of oil in abrasives used for abrasive blast cleaning.

1.2 The procedure can be used in the laboratory, field, blast and paint shop or steel fabrication shop.

1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D4940 Test Method for Conductimetric Analysis of Water Soluble Ionic Contamination of Blast Cleaning Abrasives

2.2 *SSPC Standards:*³

SSPC-AB 1 Mineral and Slag Abrasives

SSPC-AB 2 Cleanliness of Recycled Ferrous Metallic Abrasive

SSPC-AB 3 Ferrous Metallic Abrasive

SSPC-AB 4 Recyclable Encapsulated Abrasive Media

¹ This practice is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.46 on Industrial Protective Coatings.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Society for Protective Coatings (SSPC), 800 Trumbull Drive, Pittsburgh, PA 15205, <http://www.sspc.org>.

3. Summary of Practice

3.1 A sample of the abrasive is placed in a container, covered with water and vigorously shaken. The presence of an oil sheen or oil drops on the surface is cause for rejection of the supply of abrasive being tested.

4. Significance and Use

4.1 Oil in abrasives can be transferred to the surface being cleaned, thus contaminating it. This can cause film defects, affect adhesion of the coating applied over it, and the ultimate performance of the coating system.

4.2 Oil in abrasives is one of the cleanliness tests required for mineral and slag abrasives in SSPC-AB 1, for recycled ferrous abrasives in SSPC-AB 2, for new ferrous abrasives in SSPC-AB 3, and for recyclable encapsulated abrasive media in SSPC-AB 4.

4.3 Other contaminants in abrasive such as chemical contaminants or particulate matter require other methods for detection such as Test Method D4940 for conductive-potential, ionic contaminants. Because Test Method D4940 specifies a different ratio of abrasive to water and requires the use of higher purity water, the solution resulting from the evaluation of the oil in abrasive shall not be used for the evaluation in accordance with Test Method D4940.

5. Apparatus and Materials

5.1 *Container*—Clear jar or bottle capable of holding 250 ml (8.5 fl oz) or more and with a lid that is capable of sealing the contents.

5.2 *Water*—Potable.

6. Procedure

6.1 Place a sample of the abrasive in a clean container to about half its height.

6.2 Add water to a level at least 2.5 cm (1 in.) above the top of the abrasive. The water temperature shall be between 20 and 35°C (68 and 95°F).

6.3 Cover the container and shake vigorously for one min.

6.4 Remove the cover from the container and let it sit for up to 5 min.

6.5 Examine the surface of the water for oil droplets or oil sheen.

6.6 If oil is visually evident the abrasive fails the test. Retest the abrasive after cleaning or discard the contaminated abrasive supply.

7. Testing Frequency

7.1 The testing frequency shall be agreed to by the purchaser and seller. A suggested testing frequency is:

7.1.1 Three tests per shipment for bulk delivery.

7.1.2 One test per 50 bags for bag delivery, or one test if the delivery is less than 50 bags.

7.1.3 One sample per shift on days that blast cleaning is performed for recycled abrasive.

8. Interpretation of Results

8.1 The presence of an oil sheen or oil droplets indicates contamination. The abrasive should be cleaned before use or discarded.

9. Report

9.1 Report the abrasive manufacturer, brand name of the product, size designation, lot/batch number, and test results.

10. Keywords

10.1 abrasive; contaminants; oil contamination

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